

REMARKS

Entry of the foregoing and favorable consideration of the subject application, in light of the following remarks, are respectfully requested.

By the present amendment, claim 1 has been amended to recite that the microorganism produces arachidonic acid. Furthermore, claim 1 has been amended to recite that during culturing an additional 6% by weight of carbon source is added. Support for this amendment to claim 1 may be found, at the very least, in Example 2 (specifically, page 23, lines 28-29, wherein 2% of glucose was added on the second, third and forth day of culturing). Finally, new claim 33 has been added. Claim 33 finds support in claim 1 as originally filed and at page 23, lines 26-29. No new matter has been added by the present amendment.

As can be seen in Example 2, the productivity of the target fatty acid, arachidonic acid, increases with total concentration of carbon source (when total glucose was 12%, arachidonic acid productivity was 7.1 g/L; at 14%, arachidonic acid productivity was 9.8 g/L; and at 17%, arachidonic acid productivity was 14.3 g/L). This effect can be obtained by using a microorganism belonging to the genus *Mortierella* and having resistance to a carbon source of high concentration. On the other hand, according to the Kyle reference cited by the Examiner, glucose 80 g/L (8%) provided the productivity of only 5.3 g/L. As can be seen from Table 3 of Kyle, culturing at 10% starting glucose concentration provided the productivity of only 4.8 g/L. By using the strain of the Kyle reference, increase of carbon source cannot enhance the productivity of arachidonic acid, because the strain does not have the carbon source resistance.

Furthermore, Kyle does not disclose or suggest a process of producing arachidonic acid wherein culturing of a microorganism results in production of at least 7g/L of arachidonic acid in 5 to 10 days.


With regard to claim 33, Kyle does not disclose or suggest that aeration of the culture is done at at least about 1 vvm.

Therefore, Kyle does not anticipate or even render obvious the claimed invention.

In the event that there are any questions relating to this Preliminary Amendment, or the application in general, it would be appreciated if the Examiner would telephone the undersigned concerning such questions so that prosecution of this application may be expedited.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By: 
Dawn M. Gardner
Registration No. 44,118

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620

Date: May 20, 2002

Attachment to Preliminary Amendment dated May 20, 2002

Marked-up Claim 1

1. (Three Times Amended) A process for producing arachidonic acid or lipid containing arachidonic acid comprising the steps of culturing a microorganism, belonging to the genus *Mortierella* and having resistance to a carbon source of high concentration, in a medium having a carbon source concentration of at least 4% by weight at the start of culturing and the addition of at least an additional 6% by weight of carbon source during the culturing, thereby forming archidonic acid or lipid containing arachidonic acid and recovering arachidonic acid, wherein the microorganism [has an ability to produce] produces arachidonic acid of at least about 7 g/L when cultured in a medium containing at least about 4% carbon source at the start of culturing and the addition of at least an additional 6% by weight of carbon source during the culturing, and at least about 2% nitrogen source at the start of culturing for about 5 to 10 days with agitation and aeration.